

REMARKS

Claims 1 and 3 are pending in the present application, claims 2 and 4-6 having been cancelled herein. The Office Action and cited references have been considered. Favorable reconsideration is respectfully requested.

Claims 2-4 and 6 were objected to due to an informality. The informality has been corrected in claim 3. The remaining claims have been cancelled. This rejection is now overcome.

Claim 2 was rejected under 35 U.S.C. §112, second paragraph. This claim has been cancelled and the objected to language has not been included in claim 1. Withdrawal of this rejection is respectfully requested.

Claims 1-6 were rejected under 35 U.S.C. §102(b) as being anticipated by Witby, U.S. Patent No. 3,526,828. This rejection is respectfully traversed for the following reasons.

Claim 1 recites a particle counting method, comprising the steps of taking in as aerosol flow a process gas in a process apparatus disposed in a clean zone for conducting a physical or chemical reaction in a vapor phase, charging particles existing in the aerosol flow, and applying voltage to a conductive cylinder disposed in the aerosol flow having been subjected to the charging process to thereby electrostatically attract and remove floating ions included in

the aerosol. Clean air is then introduced from the clean zone and a non-charged sheath gas flow shaped like a laminar flow is generated in the periphery of the conductive cylinder disposed in the aerosol flow, and the sheath gas flow is mixed with the aerosol flow. Then an electrostatic field is applied to the conductive cylinder to thereby classify the particles existing in the aerosol flow by getting the respective particles into traces deflected depending on their particle sizes. Particles having specific traces deflected are detected and the spatial number density of particles is measured to thereby calculate the particle size distribution of the particles floating in the process apparatus. This is not taught, disclosed, or made obvious by the prior art of record.

Witby, in Fig. 8, discloses an embodiment in which the mobility separator 72 is a two-flow device in that it taps off by the use of a filter 83, some of the aerosol flow, providing a clean air sheath around the particle collection electrode rod 81. However, Applicant respectfully submits that this is different than Applicants' claimed method. In the embodiment shown in Witby the air flow divided in two parts, some of which passes through the filter 83 to form the clean air sheath and the rest of which passes around the filter body and the electrode 81. In contrast, in Applicants'

method, clean air is introduced from the clean zone and a non-charge sheath gas flow shaped like laminar flow is generated in the periphery of the conductor cylinder disposed in the aerosol flow, and the sheath gas flow is mixed with the aerosol flow.

Further, in Applicants' claimed invention, an electrostatic field is applied to the conductive cylinder to thereby classify the particles existing in the aerosol flow by getting respective particles into traces deflected depending on their particle sizes, and particles having specific traces deflected are detected and measured. Applicants respectfully submit that this is different than the Witby system, which does not disclose detecting particles having specific traces deflected. At least for these reasons, Applicants respectfully submit that claim 1 is not anticipated by the Witby patent.

Claim 2 depend from and include the recitations of claim 1. Applicants respectfully submit that claim 2 is patentable in and of itself and as it depends from and includes the recitations of claim 1 which is patentable for the reasons discussed above.

Claims 1 and 2 were rejected under 35 U.S.C. §102(e) as being anticipated by Ebara (U.S. Patent No. 6,281,972). This rejection is respectfully traversed.

Ebara discloses an apparatus and method for measuring particle size distribution. As shown in Figs. 8 and 1, a sample gas is combined with a sheath gas. A sheath gas stationarily flows into the cylindrical hollow portion 14 from the top opening thereof in a flow volume of  $Q_c$ , due to the suction force produced by the driven first waste pump 19. However, there is no disclosure that the sheath gas is clean air which is introduced from a clean zone in which the apparatus is disclosed. Further, there is no disclosure that particles are detected having specific traces deflected depending on their particle size. For at least these reasons, Applicants respectfully submit that claim 1 is patentable over the Ebara reference.

Applicants note the Examiner has not returned an initialed copy of the PTO-1449 Form filed with the Information Disclosure Statement on December 29, 2004. The Examiner is requested to consider and acknowledge such action in the next Office Action.

In view of the above amendments and remarks, Applicants respectfully request reconsideration and withdrawal of the outstanding rejections of record. Applicants submit that the application is in condition for allowance and early notice to this effect is most earnestly solicited.


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Reply to Office Action of March 28, 2006

If the Examiner has any questions he is invited to  
contact the undersigned at 202-628-5197.

Respectfully submitted,

BROWDY AND NEIMARK, P.L.L.C.  
Attorneys for Applicant

By

  
Ronni S. Billions  
Registration No. 31,979

RSJ:cak  
Telephone No.: (202) 628-5197  
Facsimile No.: (202) 737-3528  
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